

CLAIMS

What is claimed is:

- 5 1. A gravity-sensitive latch comprising:
- a housing;
- a button supported for slidable movement relative to said housing;
- a pendulum operatively connected to said button, said pendulum pivoting
- between a latched position and an unlatched position;
- 10 a pawl being dimensioned and configured to engage a keeper, said pawl
- pivoting between a latched position and an unlatched position;
- means for securing said housing and said button;
- means for pivotally securing said housing and said pawl; and
- means for operatively connecting said pendulum and said pawl.
- 15 2. The gravity-sensitive latch according to claim 1, wherein said latch can
- be actuated when said latch is in a horizontal position, and said latch cannot be
- actuated when said latch is in a vertical position.
- 20 3. The gravity-sensitive latch according to claim 1, wherein said housing
- has a top, a bottom, a pair of sides, a front end, and a rear end.
4. The gravity-sensitive latch according to claim 3, wherein said top of
- said housing is substantially open within a front portion of said housing, and said
- 25 bottom of said housing is substantially open within a rear portion of said housing.

5. The gravity-sensitive latch according to claim 3, wherein said front end of said housing is dimensioned and configured for securing to said button.

6. The gravity-sensitive latch according to claim 5, wherein an end of said button abuts said pendulum when said button is installed on said latch.

7. The gravity-sensitive latch according to claim 1, wherein said button is biased away from said housing towards its forward position.

10 8. The gravity-sensitive latch according to claim 1, wherein said button includes a body having a front surface.

15 9. The gravity-sensitive latch according to claim 1, wherein said pendulum has a connection corner, a weighted corner, and an abutment corner dimensioned and configured to abut said button.

10. The gravity-sensitive latch according to claim 9, wherein said weighted corner extends upward.

20 11. The gravity-sensitive latch according to claim 9, wherein said weighted corner has greater mass than the remainder of said pendulum.

25 12. The gravity-sensitive latch according to claim 9, wherein said pendulum further has at least one peg protruding from said pendulum and said pawl has at least a corresponding aperture for being operatively connected with said pendulum.

13. The gravity-sensitive latch according to claim 1, wherein said pawl has a bottom, a top surface, a rear end, a front end operatively connected to said pendulum by said means for operatively connecting said pendulum and said pawl, and a pair of sides.

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14. The gravity-sensitive latch according to claim 13, wherein said bottom of said pawl has a pawl-engaging aperture and said means for pivotally securing said housing and said pawl is a pawl-retaining bracket, said bracket has a pawl-engaging aperture that is substantially the same as and located adjacent to said
10 pawl-engaging aperture of said bottom of said pawl.

15. The gravity-sensitive latch according to claim 13, wherein a biasing means extends downward from the top of said pawl.

16. The gravity-sensitive latch according to claim 1, wherein said pawl is
15 biased towards its latched position.

17. The gravity-sensitive latch according to claim 1, wherein said means for securing said housing and said button is a pin.
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18. The gravity-sensitive latch according to claim 1, wherein said means for operatively connecting said pendulum and said pawl is a connecting rod.

19. The gravity-sensitive latch according to claim 1, further comprising a
25 keeper adapted for engaging with said pawl.

20. The gravity-sensitive latch according to claim 19, wherein said keeper is a cylindrical shaft having a channel around its upper end.

21. The gravity-sensitive latch according to claim 20, wherein said upper
5 end of said keeper has a tip and a tapered configuration.

22. The gravity-sensitive latch according to claim 20, wherein said pawl has a bottom having a pawl-engaging aperture, said means for pivotally securing said housing and said pawl is a pawl-retaining bracket, said bracket has a pawl-
10 engaging aperture that is substantially the same as and located adjacent to said pawl-engaging aperture of said bottom of said pawl, said latch is latched by inserting said keeper into said pawl-engaging apertures in said pawl and said bracket whereby causing said upper end of said keeper to bias said pawl towards its unlatched position so as to allow said keeper to enter said pawl.

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23. A gravity-sensitive latch comprising:

a housing;

a handle pivotally secured to said housing, said handle pivoting between a latched position and an unlatched position;

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a pawl pivotally secured to said housing, said pawl being dimensioned and configured to engage a keeper, said pawl pivoting between a latched position and an unlatched position;

a pawl-retaining arm pivoting between a latched position and an unlatched position;

a pendulum pivotally secured to said pawl-retaining arm, said pendulum being dimensioned and configured to abut said handle, said pendulum pivoting between a latched position and an unlatched position; and

means for pivotally securing said housing and said pawl-retaining arm.

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24. The gravity-sensitive latch according to claim 23, wherein said latch can be actuated when said latch is in a horizontal position, and said latch cannot be actuated when said latch is in a vertical position.

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25. The gravity-sensitive latch according to claim 23, wherein said housing is dimensioned and configured to receive a keeper.

26. The gravity-sensitive latch according to claim 23, wherein:

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said housing includes a front end, a central portion defining a channel dimensioned and configured to receive said pawl and a keeper, and a rear portion dimensioned and configured to receive a pin, said channel dimensioned and configured to pivotally secure said pawl within said housing; and

said handle includes a vertical portion, a horizontal portion, and a rear end dimensioned and configured to engage with said front end of said housing.

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27. The gravity-sensitive latch according to claim 26, wherein said handle includes a rearward-projecting structure for abutting said pendulum and said handle is biased towards its latched position by biasing means wherein the engagement portion of said rear end of said handle that engages with said front end of said housing is positioned below said rearward-projecting flange and said biasing means.

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28. The gravity-sensitive latch according to claim 23, wherein said handle includes a rearward-projecting structure for abutting said pendulum.

29. The gravity-sensitive latch according to claim 23, wherein said handle
5 includes a stop to prevent travel beyond a predetermined range of motion.

30. The gravity-sensitive latch according to claim 23, wherein said handle is biased towards its latched position.

10 31. The gravity-sensitive latch according to claim 23, wherein said pawl-retaining arm is biased towards its latched position.

32. The gravity-sensitive latch according to claim 23, wherein said pawl-retaining arm is pivotally secured to said housing at its end adjacent to said pawl.

15 33. The gravity-sensitive latch according to claim 23, wherein said pendulum has a connection corner, a weighted corner, and an abutment corner dimensioned and configured to abut said handle.

20 34. The gravity-sensitive latch according to claim 33, wherein said weighted corner extends upward.

35. The gravity-sensitive latch according to claim 33, wherein said weighted corner has greater mass than the remainder of said pendulum.

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36. The gravity-sensitive latch according to claim 23, wherein said pawl-retaining arm includes a first end having at least one flange defining at least one aperture and a second end dimensioned and configured to engage said pawl, said pendulum has at least one peg protruding from said pendulum, said at least one
 5 aperture of said first end is dimensioned and configured to receive said peg of said pendulum.

37. The gravity-sensitive latch according to claim 23, wherein said pawl includes an upper forward arm and a lower forward arm extending toward said
 10 handle, a channel between said forward arms, and a third arm extending rearward, said third arm is dimensioned and configured to engage said pawl-retaining arm, said forward arms are dimensioned and configured to secure a keeper, said pawl pivots between said latched position wherein said forward arms are substantially horizontal, and said unlatched position wherein said forward arms point downward.

38. The gravity-sensitive latch according to claim 23, wherein said pawl is biased towards its unlatched position.

39. The gravity-sensitive latch according to claim 23, wherein said means
 20 for pivotally securing said housing and said pawl-retaining arm is a pin.

40. The gravity-sensitive latch according to claim 23, further comprising a keeper adapted for engaging with said pawl.

41. A gravity-sensitive latch comprising:

a housing;

a button supported for slidable movement relative to said housing, said button secured to said housing;

5 a pendulum operatively connected to said button, said pendulum pivoting between a latched position and an unlatched position;

a pawl pivotally secured to said pendulum, said pawl being dimensioned and configured to engage a keeper, said pawl pivoting between a latched position and an unlatched position; and

10 means for pivotally securing said housing and said pawl.

42. The gravity-sensitive latch according to claim 41, wherein said latch can be actuated when said latch is in a horizontal position, and said latch cannot be actuated when said latch is in a vertical position.

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43. The gravity-sensitive latch according to claim 41, wherein said housing includes a front end dimensioned and configured for securing to said button, and a rear portion dimensioned and configured for securing to said pawl.

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44. The gravity-sensitive latch according to claim 41, wherein said button includes a structure for abutting said pendulum.

45. The gravity-sensitive latch according to claim 41, wherein said button includes a stop to prevent travel beyond a predetermined range of motion.

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46. The gravity-sensitive latch according to claim 41, wherein said button is biased away from said housing towards its forward position.

47. The gravity-sensitive latch according to claim 41, wherein button is
5 dimensioned and configured to receive a lock.

48. The gravity-sensitive latch according to claim 41, wherein said pendulum has a connection corner, a weighted corner, and an abutment corner dimensioned and configured to abut said button.

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49. The gravity-sensitive latch according to claim 48, wherein said weighted corner extends upward.

50. The gravity-sensitive latch according to claim 48, wherein said
15 weighted corner has greater mass than the remainder of said pendulum.

51. The gravity-sensitive latch according to claim 41, wherein said pawl includes an upper end dimensioned and configured for pivotally securing with said pendulum, a lower end dimensioned and configured to engage a keeper, and a
20 central section dimensioned and configured for pivotally securing with said housing.

52. The gravity-sensitive latch according to claim 51, wherein said pawl pivots between said latched position wherein said lower end is rearward, and said unlatched position wherein said lower end is forward.

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53. The gravity-sensitive latch according to claim 41, wherein said pawl is biased towards its latched position.

54. The gravity-sensitive latch according to claim 41, wherein said means
5 for pivotally securing said housing and said pawl is a rod.

55. The gravity-sensitive latch according to claim 41, further comprising a keeper.

10 56. The gravity-sensitive latch according to claim 55, wherein said keeper is a plate having an opening dimensioned and configured to engage with said pawl.

57. The gravity-sensitive latch according to claim 41, further comprising a lock for preventing actuation of said latch regardless of its orientation.

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